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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,639	07/09/2003	Sung-Gu Hwang	50266/DBP/Y35	3428
23363	7590	12/01/2004	EXAMINER	
CHRISTIE, PARKER & HALE, LLP			TRAN, THUY V	
PO BOX 7068			ART UNIT	
PASADENA, CA 91109-7068			PAPER NUMBER	
			2821	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/616,639

Applicant(s)

SUNG-GU HWANG, ET AL.

Examiner

Thuy V. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on amendment submitted on 09/20/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 11-13 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 3, 5, 11, 13 and 19 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 7-9, 12, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is a response to the Applicants' amendment submitted on September 20<sup>th</sup>, 2004. In virtue of this amendment:

- Claims 10 and 14-17 are canceled; and thus,
- Claims 1-9, 11-13, and 18-20 are now presented in the instant application.

Upon reconsideration, the indicated allowability of claims 4, 12, and 20 are withdrawn in view of the teachings of prior art of record to Yoshinaga et al. and Lee. Rejections based on these reference(s) follow:

#### ***Claim Objections/ Minor Informalities***

1. Claims 11-13 and 18-20 are objected to because of the following informalities:

Claim 11, line 4, --of a cross section-- should be inserted between "surface" and "of";

Claim 12, line 4, --of a cross section-- should be inserted between "surface" and "of";

Claim 13, line 4, --of a cross section-- should be inserted between "surface" and "of";

Claim 18, line 9, --of a cross section of the ferrite core-- should be inserted between "surface" (third occurrence) and "comprising";

Claim 19, line 10, --of a cross section of the ferrite core-- should be inserted between "surface" (second occurrence) and "comprising"; and

Claim 20, line 10, --of a cross section of the ferrite core-- should be inserted between "surface" (second occurrence) and "comprising".

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Lee (U.S. Patent No. 6,633,116).

With respect to claim 12, Lee discloses, in Figs. 8-9C, a deflection yoke for a cathode ray tube including a ferrite core [50] having a funnel-shape body, an inner surface, and an outer surface; the inner surface of a cross section of the ferrite core comprising (1) a first section [51b] (see Fig. 9C) formed as having, along a length thereon, a shape of a circle with a varying radius, and (2) a second section [51a] (see Fig. 9C) having a non-circular shape and being connected to the first section, wherein the second section [51a] of the inner surface has a shape of a segment of a circle and two substantially straight lines (see Figs. 9B and 9C).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 4, 7-9, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinaga et al. (U.S. Patent No. 6,703,801) in view of Lee (U.S. Patent No. 6,633,116).

With respect to claim 1, Yoshinaga et al. discloses, in Figs. 5 and 7, a deflection yoke for a cathode ray tube including a ferrite core [4] having a funnel-shaped body (see Fig. 5), an inner surface [4b], and an outer surface (see Fig. 5); the inner surface of a cross-section of the ferrite core [4] comprising (1) a first section (top part; see Fig. 7) having, along a length thereon, a shape of a circle with a predetermined, unvarying radius, and (2) a second section (middle part; see Fig. 7) having, along a length thereon, a shape of a circle with a varying radius; the second section being connected to the first section. Yoshinaga et al. further teaches a third section which includes a circular part and a gap  $\delta 1$  (see Fig. 5) and connects to the second section. Yoshinaga et al. does not teach a third section having a non-circular shape.

Lee discloses, in Figs. 8-9C, a ferrite core [50] included in a deflection yoke having a non-circular third section [51a] (which includes 52; see Fig. 9C and col. 7, lines 8-20).

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the deflection yoke of Yoshinaga et al. by replacing the third section including the

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circular part and the gap of Yoshinaga et al. with the non-circular third section taught by Lee to improve the overall performance of the deflection yoke since Lee teaches that, by providing such a non-circular third section, a deflection efficiency of the ferrite core would be enhanced and a deflection power provided to the deflection yoke can be reduced (see Lee; col. 12, lines 9-12).

With respect to claim 4, Yoshinaga et al. discloses, in Figs. 5 and 7, a deflection yoke for a cathode ray tube including a ferrite core [4] having a funnel-shaped body (see Fig. 5), an inner surface [4b], and an outer surface (see Fig. 5); the inner surface of a cross-section of the ferrite core [4] comprising (1) a first section (top part; see Fig. 7) having, along a length thereon, a shape of a circle with a predetermined, unvarying radius, and (2) a second section (middle part; see Fig. 7) having, along a length thereon, a shape of a circle with a varying radius; the second section being connected to the first section. Yoshinaga et al. further teaches a third section which includes a circular part and a gap [δ1] (see Fig. 5) and connects to the second section. Yoshinaga et al. does not teach a third section having a non-circular shape, wherein the third section of the inner surface has a shape of a segment of a circle and two substantially straight lines.

Lee discloses, in Figs. 8-9C, a ferrite core [50] included in a deflection yoke having a non-circular third section [51a] (which includes 52), wherein the inner surface of the third section [51a] has a shape of a segment of a circle and two substantially straight lines (see Figs. 9B-9C and col. 7, lines 8-20).

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the deflection yoke of Yoshinaga et al. by replacing the third section including the circular part and the gap of Yoshinaga et al. with the non-circular third section taught by Lee to

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improve the overall performance of the deflection yoke since Lee teaches that, by providing such a non-circular third section, a deflection efficiency of the ferrite core would be enhanced and a deflection power provided to the deflection yoke can be reduced (see Lee; col. 12, lines 9-12).

With respect to claim 7, Yoshinaga et al. discloses that the deflection yoke further comprises a horizontal deflection coil [1], a vertical deflection coil [3], and an insulating member [2] interposed between the horizontal and the vertical deflection coils.

With respect to claim 8, Yoshinaga et al. discloses that the horizontal and vertical deflection coils [1, 3] have a shape similar to a shape of the insulating member [2] (see Fig. 5; col. 1, lines 19-21).

With respect to claim 9, Yoshinaga et al. discloses that the horizontal and vertical deflection coils [1, 3] include a pair of coil members [1, 3].

With respect to claim 18, Yoshinaga et al. discloses a cathode ray tube comprising (1) a substantially rectangular panel [11] (see Fig. 4), (2) a funnel [14] connected to the panel and having a cone shape (see Fig. 4), (3) a neck [14a] connected to the funnel (see Fig. 4), (4) a deflection yoke [10] mounted to an outer circumference of the funnel (see Fig. 4), and (5) a ferrite core [4] mounted to a side of the deflection yoke, wherein the ferrite core includes a body (see Fig. 5) having an inner surface [4b] and an outer surface (see Fig. 5); the inner surface of a cross-section of the ferrite core [4] comprising (a) a first section (top part; see Fig. 7) having, along a length thereon, a shape of a circle with a predetermined, unvarying radius, and (b) a second section (middle part; see Fig. 7) having, along a length thereon, a shape of a circle with a varying radius; the second section being connected to the first section. Yoshinaga et al. further

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teaches a third section which includes a circular part and a gap [δ1] (see Fig. 5) and connects to the second section. Yoshinaga et al. does not teach a third section having a non-circular shape.

Lee discloses, in Figs. 8-9C, a ferrite core [50] included in a deflection yoke having a non-circular third section [51a] (which includes 52; see Fig. 9C and col. 7, lines 8-20).

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the CRT deflection yoke of Yoshinaga et al. by replacing the third section including the circular part and the gap of Yoshinaga et al. with the non-circular third section taught by Lee to improve the overall performance of the deflection yoke since Lee teaches that, by providing such a non-circular third section, a deflection efficiency of the ferrite core would be enhanced and a deflection power provided to the deflection yoke can be reduced (see Lee; col. 12, lines 9-12).

With respect to claim 20, Yoshinaga et al. discloses a cathode ray tube comprising (1) a substantially rectangular panel [11] (see Fig. 4), (2) a funnel [14] connected to the panel and having a cone shape (see Fig. 4), (3) a neck [14a] connected to the funnel (see Fig. 4), (4) a deflection yoke [10] mounted to an outer circumference of the funnel (see Fig. 4), and (5) a ferrite core [4] mounted to a side of the deflection yoke, wherein the ferrite core includes a body (see Fig. 5) having an inner surface [4b] and an outer surface (see Fig. 5); the inner surface of a cross-section of the ferrite core [4] comprising (a) a first section (top part; see Fig. 7) having, along a length thereon, a shape of a circle with a predetermined, unvarying radius, and (b) a second section (middle part; see Fig. 7) having, along a length thereon, a shape of a circle with a varying radius; the second section being connected to the first section. Yoshinaga et al. further teaches a third section which includes a circular part and a gap [δ1] (see Fig. 5) and connects to



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the second section. Yoshinaga et al. does not teach a third section having a non-circular shape, wherein the third section of the inner surface has a shape of a segment of a circle and two substantially straight lines.

Lee discloses, in Figs. 8-9C, a ferrite core [50] included in a deflection yoke having a non-circular third section [51a] (which includes 52), wherein the inner surface of the third section [51a] has a shape of a segment of a circle and two substantially straight lines (see Figs. 9B-9C and col. 7, lines 8-20).

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the CRT deflection yoke of Yoshinaga et al. by replacing the third section including the circular part and the gap of Yoshinaga et al. with the non-circular third section taught by Lee to improve the overall performance of the deflection yoke since Lee teaches that, by providing such a non-circular third section, a deflection efficiency of the ferrite core would be enhanced and a deflection power provided to the deflection yoke can be reduced (see Lee; col. 12, lines 9-12).

***Allowable Subject Matter***

7. Claims 2-3, 5, 11, 13, and 19 are allowed.

8. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

- A deflection yoke wherein the first and second sections have surfaces rougher than a surface of the third section, in combination with the remaining claimed limitations as called for in claim 6;
- A deflection yoke for a cathode ray tube, wherein the third section of the inner surface has a shape of interconnected segments of three circles and each is of a different radius, in combination with the remaining claimed limitations as called for in independent claim 2 (claim 3 is allowed since it depends on claim 2);
- A deflection yoke for a cathode ray tube, wherein the third section of the inner surface has a shape of interconnected segments of three circles and two substantially straight lines, in combination with the remaining claimed limitations as called for in independent claim 5;
- A deflection yoke for a cathode ray tube, wherein the second section of the inner surface has a shape of interconnected segments of three circles and each is of a different radius, in combination with the remaining claimed limitations as called for in independent claim 11;
- A deflection yoke for a cathode ray tube, wherein the second section of the inner surface has a shape of interconnected segments of three circles and two substantially straight lines, in combination with the remaining claimed limitations as called for in independent claim 13; and
- A cathode ray tube, wherein the third section of the inner surface has a shape of interconnected segments of three circles and each is of a different radius, in

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combination with the remaining claimed limitations as called for in independent claim 19.

***Citation of relevant prior art***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Hishiki et al. (U.S. Patent No. 6,046,538) discloses a deflection yoke and yoke core used for the deflection yoke.

Prior art Dam (U.S. Patent No. 4,553,120) discloses a deflection yoke assembly.

***Remarks on Applicants' arguments***

10. Applicants' arguments with respect to claims 1 and 18 have been considered but are moot in view of the new ground(s) of rejection (as shown in details in Claim Rejections-35 USC § 103 set forth in this Office Action).

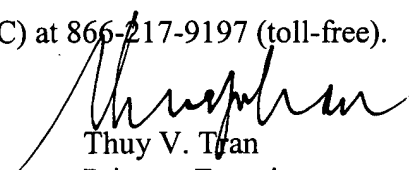
***Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thuy V. Tran  
Primary Examiner  
Art Unit 2821

11/27/2004